

DISCLAIMER: These Standard Operating Procedures (SOP's) are for the exclusive use of Navy Public Works Center (PWC) Norfolk. They are promulgated as guidance for their NAVFAC Commands. If intended to be used by other activities, they must be tailored to each activity's particular requirements and must be reviewed/approved by the activity's safety professionals prior to use.

**NAVY PUBLIC WORKS CENTER
NORFOLK, VIRGINIA
UTILITIES DEPARTMENT**

STANDARD OPERATING PROCEDURE / JOB HAZARD ANALYSIS

TITLE

ROD UNDERGROUND DUCTBANK CONDUIT

**PROCEDURE NUMBER
WC 624 HVE 037**

**DISTR:
Code 601C.3
Code 610.E1
Code 620
Code 622
Code 622.3**

SIGNED:_____
(DATE)

APPROVED:_____
(DATE)

SAFETY PROFESSIONAL:_____
(DATE)

MANAGEMENT OFFICIAL:_____
(DATE)

DATE:_____ **REVISION DATE:_____**

ROD UNDERGROUND DUCTBANK CONDUIT

Purpose:

Procedure to rod conduits, or ducts. Rodding is necessary to install pull strings or ropes.

Potential Energy Sources:

1. Energized 34.5/11.5/4.16 kv cables in manholes
2. Deenergized, but not properly grounded, 34.5/11.5/4.16 kv cables in manholes

Tools And PPE:

Tools: Short jointed rods or long flexible rods, pull string or pulling rope, manhole hook, hand tools, blast blankets, and fiberglass ladder. PPE: Nomex coveralls, Nomex hood, insulating rubber gloves, insulating rubber sleeves, hard hat, safety shoes, work gloves, safety glasses, orange vest, safety harness, and back brace if required by back injury prevention and control program. The class of rubber gloves and sleeves will depend on the exposure voltage as per the following: Class 0 - up to 1,000 volts, Class 1 - up to 7,500 volts, Class 2 - up to 17,000 volts, Class 3 - up to 26,500 volts, Class 4 - up to 36,000 volts.

References:

1. PWC Occupational Safety and Health Program Manual, PWCNORVAINST 5100.33E
2. SOP WC 624 HVE 001, Set Up and Secure Bucket/Auger Truck
3. Occupational Safety and Health Standards for General Industry (29 CFR PART 1910): Subpart I, Personnel Protective Equipment; Subpart R, Electrical Power Generation / Transmission / Distribution; Subpart S, Electrical
4. NFPA 70 E approach distances to exposed, energized, electrical conductors and circuit parts.
5. ANSI C2-1987 National Electrical Safety Code
6. Electrical Transmission and Distribution Safety Manual, P-1060
7. The Lineman's and Cableman's Handbook, 5th ED
8. SOP WC 622 HVE 013, Deenergization, Lockout, Tagout
9. SOP WC 622 HVE 007, Switchout and Switchback Energized Circuit
10. SOP WC 624 HVE 031, Overhead Voltage & Phase Rotation Checks, Circuits 480 Volts or less
11. SOP 600 HVE 8, Electrical Manhole Entry

Procedures:

1. WC 622 personnel will deenergize any circuits which will interfere with the job. WC 622 personnel will follow SOPs
WC 622 HVE 007, Switchout and Switchback Energized Circuit
WC 622 HVE 013, Hazardous Energy Control(Lockout, Tagout)
2. Open manhole(s) and gas free per SOP 600 HVE 8, Electrical Manhole Entry.
3. The following rules will apply to job.
 - a) Traffic control devices per SOP 600 HVE 12, Traffic Control Devices, will be required for work in, or adjacent to roads.

ROD UNDERGROUND DUCTBANK CONDUIT

b) A top watch is required when ever personnel are in a manhole.

c) Personnel in a manhole with energized circuits will wear Nomex coveralls, Nomex hood, insulating rubber gloves, insulating rubber sleeves, safety shoes, boots, safety glasses and a safety harness connected to the manhole guard and rescue device.

d) Blast blankets will be placed over all energized circuits in a manhole.

After the blast blankets are in place, personnel in a manhole may remove their Nomex hoods, insulating gloves, and insulating sleeves. Work gloves will still be worn.

e) Personnel top side will wear orange vests if the work is in, or adjacent to, a road. Top side personnel will also wear safety shoes, hard hats, and work gloves.

4. Insert a series of short jointed, or long flexible rods into the conduit, or duct. When the rods traverse to the opposite manhole, attach a pull string, or rope, to the rods and thread the string, or rope, by withdrawing rods from the duct. If the rods do not easily traverse the duct then the duct will have to be mandreled as per the appropriate SOP.

5. Close the manhole(s).

6. WC 622 personnel will energize the circuits which interfered with the job. WC 622 personnel will follow SOPs

WC 622 HVE 007, Switchout and Switchback Energized Circuit
WC 622 HVE 013, Hazardous Energy Control(Lockout)

END